

1615

PATENT

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In re Application of:

Claude DUBIEF and Christine DUPUIS

Application No.: 10/092,530

Group Art Unit: 1615

Filed: March 8, 2002

Examiner: L. Channavajjala

#8

For: COSMETIC COMPOSITION FOR TREATMENT OF KERATINOUS  
MATERIALS COMPRISING A GRAFTED SILICONE POLYMER AND AN  
AQUEOUS DISPERSION OF INSOLUBLE PARTICLES OF A CATIONIC  
POLYMER

**REQUEST FOR CORRECTION OF PUBLISHED APPLICATION**  
**UNDER 37 C.F.R. § 1.221(b)**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

On September 26, 2002, the Office published the above identified Application No. 10/092,530 as Publication No. US-2002-0136699-A1. The published application contains mistakes that are the fault of the Office and which may be material.. A mistake is material when it affects the public's ability to appreciate the technical disclosure of the patent application publication or determine the scope of the provisional rights that an applicant may seek to enforce upon issuance of a patent. See CFR § 1.221(b).

Attached hereto are copies of pages of the originally filed application and a marked-up copy of the corresponding pages of the published application containing

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the mistakes. The material mistakes, which are indicated in red ink on the marked-up copy of the published application, are as follows:

1) At page 1, paragraph [0001], line 4, the hyphen should be deleted from the phrase "skeleton-grafted." The hyphen could affect the public's ability to appreciate the technical disclosure of the patent application publication because having the terms in the phrase joined with a hyphen imparts a different and unintended meaning to the sentence containing them.

2) At page 1, paragraph [0002], line 3, the term "is" should be deleted. The term "is" in the sentence is grammatically incorrect, and therefore could affect the public's ability to appreciate the technical disclosure of the patent application publication.

3) At page 2, paragraph [0015], line 2, the term "carboxylc" should read "carboxylic," which is the proper name for the chemical compound. The term "carboxylc" does not exist as proper chemical nomenclature. Therefore, the mistake is material.

4) Immediately following paragraph [0080] on page 4, there should be a heading designated "CLAIMS." Without the heading, there is no clear indication of where the claims of the published application begin. Therefore, the mistake is material.

5) In claim 14, line 5, the term "acrylonicrile" should read "acrylonitrile," which

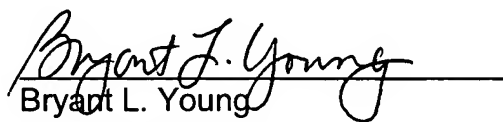
is the proper name for the chemical compound. The term "acrylonitrile" does not exist as proper chemical nomenclature. Therefore, the mistake is material.

For at least these reasons, the above mistakes could cause the public to improperly determine the scope of Applicants' provisional rights. Therefore, Applicants request that the Office correct the mistakes in the published application, and forward to Applicants a copy of the corrected published application, or at least a notification of the occurrence or predicted occurrence of the corrected publication, once it has been corrected.

Applicants believe that no Petition or fee is due in connection with this Request, as the mistakes identified in the published application are the fault of the Office. However, if any Petition or fee is due, please grant the Petition and charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
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By:   
Bryant L. Young  
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Date: November 26, 2002

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**COSMETIC COMPOSITION FOR TREATING KERATIN SUBSTANCES, COMPRISING AT LEAST ONE GRAFTED SILICONE POLYMER AND AT LEAST ONE AQUEOUS DISPERSION OF INSOLUBLE PARTICLES OF NONIONIC OR CATIONIC POLYMER**

*delete "hyphen"*

[0001] The present invention relates to a cosmetic or dermatological composition for treating keratin substances, in particular the hair, comprising at least one grafted silicone polymer with a polysiloxane skeleton grafted with non-silicone organic monomers, and at least one aqueous dispersion of insoluble particles of nonionic or cationic polymer.

*delete "is"*

[0002] It has been proposed to use aqueous dispersions of insoluble polymer particles in compositions for maintaining the hairstyle. However, ~~is~~ the results obtained hitherto are still not satisfactory. The reason for this is that the fixing power is still not sufficient, the drying time is long and the cosmetic properties are still not satisfactory. Furthermore, the polymer is difficult to remove from the hair during washing with a shampoo.

[0003] Polymers with a polysiloxane skeleton grafted with non-silicone organic monomers are also known in the prior art. They are preferably chosen from those described in patent applications EP-A-0,582,152 and WO 93/23009. They are used in particular in hair compositions for their styling properties.

[0004] Compositions for washing and/or caring for and/or treating the hair containing styling polymers of this type in their formulation generally have the drawback of having a fixing power which is still insufficient.

[0005] The expression fixing power of the composition will be understood to denote the ability of this composition to give the hair cohesion such that the initial shape of the hairstyle is retained.

[0006] Compositions are thus still sought which do not have the drawbacks described above.

[0007] The Applicant has discovered, surprisingly, that by combining at least one silicone polymer having a polysiloxane skeleton grafted with non-silicone organic monomers with at least one dispersion of insoluble particles of nonionic or cationic polymer, the abovementioned drawbacks are overcome.

[0008] These compositions have good fixing power and good cosmetic properties such as disentangling and styling or brushing of the hair after application, the softness, the feel and the smoothness of the hair.

[0009] The composition according to the invention is thus essentially characterized in that it comprises, in a cosmetically or dermatologically acceptable medium, at least one grafted silicone polymer with a polysiloxane skeleton grafted with non-silicone organic monomers and at least one dispersion of insoluble particles of nonionic or cationic polymer.

[0010] In the following text, in accordance with what is generally accepted, the term silicone polymer is understood to denote any organosilicon polymer or oligomer having a linear or cyclic, branched or crosslinked structure of variable molecular weight, obtained by polymerization and/or poly-

condensation of suitably functionalized silanes, and consisting essentially of a repetition of main units in which the silicon atoms are linked together by oxygen atoms (siloxane bonding  $\text{Si}-\text{O}-\text{Si}$ ), optionally substituted hydrocarbon radicals being linked directly via a carbon atom to the said silicon atoms. The most common hydrocarbon radicals are alkyl radicals, especially  $\text{C}_1$ - $\text{C}_{10}$  alkyl radicals, and in particular methyl, fluoroalkyl radicals, aryl radicals and in particular phenyl, and alkenyl radicals and in particular vinyl; other types of radicals which can be linked, either directly or via a hydrocarbon radical, to the siloxane chain are, especially, hydrogen, halogens and in particular chlorine, bromine or fluorine, thiols, alkoxy radicals, polyoxyalkylene (or polyether) radicals and in particular polyoxyethylene and/or polyoxypropylene, hydroxyl or hydroxyalkyl radicals, substituted or unsubstituted amine groups, amide groups, acyloxy radicals or acyloxyalkyl radicals, hydroxyalkylamino or aminoalkyl radicals, quaternary ammonium groups, amphoteric or betaine groups, anionic groups such as carboxylates, thioglycolates, sulphosuccinates, thiosulphates, phosphates and sulphates, needless to say this list not being limiting in any way (so-called "organomodified" silicones).

[0011] According to the present invention, the grafted silicone polymer(s) which is (are) to be used is (are) that (those) which comprise(s) a main silicone (or polysiloxane  $\text{Si}-\text{O}-\text{Si}$ ) chain on which is grafted, inside the said chain as well as, optionally, on at least one of its ends, at least one organic group containing no silicone.

[0012] These silicone polymers can be existing commercial products or alternatively can be obtained according to any means known to those skilled in the art, in particular by reaction between (i) a starting silicone which is correctly functionalized on one or more of these silicon atoms, and (ii) a non-silicone organic compound which is itself correctly functionalized with a function which is capable of reacting with the functional group(s) borne by the said silicone, forming a covalent bond; a classic example of such a reaction is the hydrosilylation reaction between  $\text{Si}-\text{H}$  groups and vinyl groups  $\text{CH}_2=\text{CH}-$ , or alternatively the reaction between thio functional groups  $-\text{SH}$  with these same vinyl groups.

[0013] Examples of silicone polymers which are suitable for carrying out the present invention, as well as their specific mode of preparation, are described in particular in patent applications EP-A-0,582,152, WO 93/23009 and WO 95/03776, the teachings of which are included in their entirety in the present description by way of non-limiting references.

[0014] According to a particularly preferred embodiment of the present invention, the silicone polymer used comprises the result of the radical copolymerization between, on the one hand, at least one non-silicone anionic organic monomer having ethylenic unsaturation and/or a non-silicone hydrophobic organic monomer having ethylenic unsaturation, and, on the other hand, a silicone having in its chain at least one functional group capable of reacting with the said ethylenic unsaturations of the said non-silicone monomers, forming a covalent bond, in particular thio functional groups.

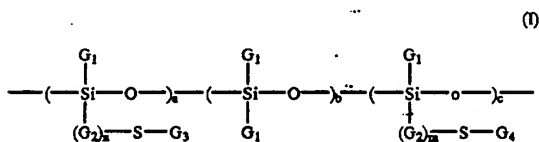
[0015] According to the present invention, the said anionic monomers containing ethylenic unsaturation are preferably

"carboxylic"

chosen, alone or as a mixture, from linear or branched, unsaturated carboxylic acids, optionally partially or totally neutralized in the form of a salt, it being possible for this (these) carboxylic acid(s) to be, more particularly, acrylic acid, methacrylic acid, maleic acid, maleic anhydride, itaconic acid, fumaric acid and crotonic acid. The suitable salts are, in particular, alkali metal salts, alkaline-earth metal salts and ammonium salts. It will likewise be noted that, in the final grafted silicone polymer, the organic group of anionic nature which comprises the result of the radical (homo)polymerization of at least one anionic monomer of unsaturated carboxylic acid type can, after reaction, be post-neutralized with a base (sodium hydroxide, aqueous ammonia, etc) in order to bring it into the form of a salt.

[0016] According to the present invention, the hydrophobic monomers containing ethylenic unsaturation are preferably chosen, alone or as a mixture, from acrylic acid esters of alkanols and/or methacrylic acid esters of alkanols. The alkanols are preferably  $C_1$ - $C_{18}$  and more particularly  $C_1$ - $C_{12}$ . The preferred monomers are chosen from the group consisting of isooctyl (meth)acrylate, isononyl (meth)acrylate, 2-ethylhexyl (meth)acrylate, lauryl (meth)acrylate, isopentyl (meth)acrylate, n-butyl (meth)acrylate, isobutyl (meth)acrylate, methyl (meth)acrylate, tert-butyl (meth)acrylate, tridecyl (meth)acrylate and stearyl (meth)acrylate, or mixtures thereof.

[0017] One family of grafted silicone polymers which is particularly suitable for carrying out the present invention consists of silicone polymers containing in their structure the unit of formula (I) below:



[0018] in which the radicals  $G_1$ , which may be identical or different, represent hydrogen or a  $C_1$ - $C_{10}$  alkyl radical or alternatively a phenyl radical; the radicals  $G_2$ , which may be identical or different, represent a  $C_1$ - $C_{10}$  alkylene group;  $G_3$  represents a polymer residue resulting from the (homo)polymerization of at least one anionic monomer containing ethylenic unsaturation;  $G_4$  represents a polymer residue resulting from the (homo)polymerization of at least one hydrophobic monomer containing ethylenic unsaturation; m and n are equal to 0 or 1; a is an integer ranging from 0 to 50; b is an integer which may be between 10 and 350, c is an integer ranging from 0 to 50; with the proviso that one of the parameters a and c is other than 0.

[0019] Preferably, the unit of formula (I) above has at least one, and even more preferably all, of the following characteristics:

[0020] the radicals  $G_1$  denote an alkyl radical, preferably the methyl radical;

[0021] n is non-zero and the radicals  $G_2$  represent a divalent  $C_1$ - $C_3$  radical, preferably a propylene radical;

[0022]  $G_3$  represents a polymeric radical resulting from the (homo)polymerization of at least one mono-

mer of the carboxylic acid type containing ethylenic unsaturation, preferably acrylic acid and/or methacrylic acid;

[0023]  $G_4$  represents a polymeric radical resulting from the (homo)polymerization of at least one monomer of the  $C_1$ - $C_{10}$  alkyl (meth)acrylate type, preferably of the isobutyl or methyl (meth)acrylate type.

[0024] Examples of silicone polymers corresponding to formula (I) are, in particular, polydimethylsiloxanes (PDMS) on which are grafted, via a thiopropylene-type connecting chain, mixed polymer units of the poly(meth)acrylic acid type and of the polymethyl (meth)acrylate type.

[0025] Other examples of silicone polymers corresponding to formula (I) are, in particular, polydimethylsiloxanes (PDMS) on which are grafted, via a thiopropylene-type connecting chain, polymer units of the polyisobutyl (meth)acrylate type.

[0026] Preferably, the number-average molecular mass of the silicone polymers of the invention, ranges approximately from 10,000 to 1,000,000 and even more preferably approximately from 10,000 to 100,000.

[0027] The grafted silicone polymers in accordance with the invention are preferably used in an amount ranging from 0.01 to 20% by weight relative to the total weight of the composition. More preferably, this amount ranges from 0.1 to 15% by weight and even more particularly from 0.5 to 10% by weight.

[0028] The aqueous dispersions of insoluble particles of nonionic or cationic polymer which can be used according to the invention are generally obtained by suspension or emulsion polymerization or copolymerization of monomers according to processes that are well known in the prior art (such dispersions are also known as "latices"). Aqueous polymer dispersions can also be obtained by dissolving the said polymer in a water-miscible organic solvent, after which water is added and lastly the organic solvent is evaporated off. This type of preparation is described, for example, in French patent application No. 2,697,160.

[0029] The average diameter of the insoluble polymer particles is generally less than 500 nm and preferably less than 250 nm. The glass transition temperature is generally between  $-30^\circ\text{C}$ . and  $90^\circ\text{C}$ . and preferably between 10 and  $35^\circ\text{C}$ .

[0030] The polymer of the aqueous dispersion comprises at least one monomer chosen, for example, from styrene, butadiene, ethylene, tetrafluoroethylene, propylene, vinyltoluene, vinyl propionate, vinyl alcohol, acrylonitrile, chloroprene, vinyl chloride, vinyl acetate, urethanes, isoprene, isobutene and esters or amides of acrylic, methacrylic, maleic, crotonic or itaconic acid, vinyl ethers, vinylpyrrolidone, vinylimidazole, trimethylammonioethyl (meth)acrylate and mixtures thereof.

[0031] The aqueous dispersions which can be used according to the invention can come from the condensation of ionic or nonionic monomers giving nonionic or cationic polymers, such as, for example, polyesters, polyamides, polyurethanes or polyethers.

[0032] The nonionic polymers in the aqueous dispersions which can be used according to the present invention are chosen, for example, from the following compounds:

[0062] These additives are present in the composition according to the invention in proportions which can range from 0 to 20% by weight relative to the total weight of the composition. The precise amount of each additive depends on its nature and is determined easily by those skilled in the art.

[0063] Needless to say, a person skilled in the art will take care to select the optional compound(s) to be added to the composition according to the invention such that the advantageous properties intrinsically associated with the composition in accordance with the invention are not, or are not substantially, adversely affected by the addition envisaged.

[0064] The compositions according to the invention can be in the form of a gel, a milk, a cream, a relatively thickened lotion or a mousse.

[0065] The compositions of the invention are used as rinse-out products or as leave-in products in particular to wash, care for, condition, maintain the style of or shape keratin substances such as the hair.

[0066] These compositions are more particularly styling products such as hairsetting lotions, blow-drying lotions, fixing compositions (lacquers) and styling compositions. The lotions can be packaged in various forms, in particular in vaporizers, pump-dispenser bottles or in aerosol containers in order to ensure application of the composition in vaporized form or in the form of a mousse. Such packaging forms are indicated, for example, when it is desired to obtain a spray, a lacquer or a mousse for fixing or treating the hair.

[0067] The compositions can also be shampoos, rinse-out or leave-in compositions, to be applied before or after shampooing, dyeing, bleaching, permanent-waving or straightening the hair.

[0068] When the composition according to the invention is packaged in aerosol form in order to obtain a lacquer or an aerosol mousse, it comprises at least one propellant which can be chosen from volatile hydrocarbons such as n-butane, propane, isobutane, pentane, a chloro and/or fluoro hydrocarbon, and mixtures thereof. Carbon dioxide, nitrous oxide, dimethyl ether, nitrogen or air, which is compressed, and mixtures thereof, can also be used as propellant.

[0069] Another subject of the invention is a process for treating keratin substances such as the hair, which consists in applying a composition as defined above to the hair and then optionally in rinsing with water.

[0070] The invention will now be illustrated more fully with the aid of the examples which follow, which should not be considered as limiting it to the embodiments described. In the text which follows, AM means active material.

#### EXAMPLE 1

##### Styling Aerosol Spray

[0071]

Grafted silicone polymer of formula (I) of polymethyl/methylsiloxane structure containing 3-propylthio polymethacrylic acid groups and 3-propylthio polymethyl methacrylate groups	3 g
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-continued

Vinyl acetate homopolymer as an aqueous dispersion containing 50% AM, sold under the name Appretan EM by the company Hoechst	4 g AM
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[0072] Aminomethylpropanol, qs 100% neutralization of the grafted silicone polymer

Dimethyl ether	30 g
Water	100 g
qs	

[0073] The composition is pressurized as an aerosol.

[0074] This composition was applied to dried hair, the hair then having a good feel, good maintenance and good hold over time.

[0075] The composition is easily removed on shampooing.

#### EXAMPLE 2

##### Styling Aerosol Spray

[0076]

Grafted silicone polymer of formula (I) of polymethyl/methylsiloxane structure containing 3-propylthio polymethacrylic acid groups and 3-propylthio polymethyl methacrylate groups	4 g
Copolymer of styrene and of butadiene as an aqueous dispersion containing 50% AM, sold under the name Rhodopas SB 012 by the company Rhône-Poulenc	2 g AM

[0077] Aminomethylpropanol, qs 100% neutralization of the grafted silicone polymer

Dimethyl ether	30 g
Water	100 g
qs	

[0078] The composition is pressurized as an aerosol.

[0079] This composition was applied to dried hair, the hair then having a good feel, good maintenance and good hold over time.

[0080] The composition is easily removed on shampooing.

#### CLAIMS

1. Cosmetic or dermatological composition intended for treating keratin substances, characterized in that it comprises, in a cosmetically or dermatologically acceptable medium, at least one grafted silicone polymer with a polysiloxane skeleton grafted with non-silicone organic monomers and at least one aqueous-dispersion of insoluble particles of nonionic or cationic polymer.

2. Composition according to claim 1, characterized in that the grafted silicone polymer comprises a main polysiloxane

should be inserted

chain on which is grafted, inside the said chain as well as, optionally, on at least one of its ends, at least one organic group containing no silicone.

3. Composition according to claim 1 or 2, characterized in that the grafted silicone polymer can be obtained by radical copolymerization between, on the one hand, at least one non-silicone anionic organic monomer having ethylenic unsaturation and/or a non-silicone hydrophobic organic monomer having ethylenic unsaturation, and, on the other hand, a polysiloxane having in its chain at least one, and preferably several, functional groups capable of reacting with the said ethylenic unsaturations of the said non-silicone monomers.

4. Composition according to claim 3, characterized in that the anionic organic monomer containing ethylenic unsaturation is chosen, alone or in the form of a monomer mixture, from linear or branched unsaturated carboxylic acids.

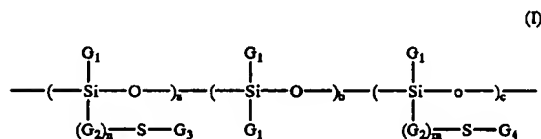
5. Composition according to claim 4, characterized in that the anionic organic monomer containing ethylenic unsaturation is chosen, alone or in the form of a monomer mixture, from acrylic acid, methacrylic acid, maleic acid, maleic anhydride, itaconic acid, fumaric acid and crotonic acid or alkali metal, alkaline-earth metal or ammonium salts thereof, or mixtures thereof.

6. Composition according to claim 3, characterized in that the hydrophobic organic monomer containing ethylenic unsaturation is chosen, alone or as a monomer mixture, from acrylic acid esters of an alkanol and/or methacrylic acid esters of an alkanol, the alkanol preferably being  $C_1$ - $C_{18}$ .

7. Composition according to claim 6, characterized in that the hydrophobic organic monomer containing ethylenic unsaturation is chosen, alone or as a monomer mixture, from the group consisting of isooctyl (meth)acrylate, isononyl (meth)acrylate, 2-ethylhexyl (meth)acrylate, lauryl (meth)acrylate, isopentyl (meth)acrylate, n-butyl (meth)acrylate, isobutyl (meth)acrylate, methyl (meth)acrylate, tert-butyl (meth)acrylate, tridecyl (meth)acrylate and stearyl (meth)acrylate.

8. Composition according to any one of claims 1 to 7, characterized in that the grafted silicone polymer comprises, on the main silicone chain, at least one organic group of anionic nature obtained by radical (homo) polymerization of at least one anionic monomer of unsaturated carboxylic acid type, partially or totally neutralized in the form of a salt.

9. Composition according to any one of claims 1 to 8, characterized in that the grafted silicone polymer is chosen from silicone polymers containing in their structure the unit of formula (I) below:



in which the radicals  $G_1$ , which may be identical or different, represent hydrogen or a  $C_1$ - $C_{10}$  alkyl radical or alternatively a phenyl radical; the radicals  $G_2$ , which may be identical or different, represent a  $C_1$ - $C_{10}$  alkylene group;  $G_3$  represents a polymer residue resulting from the (homo)polymerization of at least one anionic monomer containing ethylenic unsaturation;  $G_4$  represents a polymer residue resulting from the

(homo)polymerization of at least one hydrophobic monomer containing ethylenic unsaturation; m and n are equal to 0 or 1; a is an integer ranging from 0 to 50; b is an integer which may be between 10 and 350, c is an integer ranging from 0 to 50; with the proviso that one of the parameters a and c is other than 0.

10. Composition according to claim 9, characterized in that the unit of formula (I) has at least one of the following characteristics:

the radicals  $G_1$  denote a  $C_1$ - $C_{10}$  alkyl radical;

n is non-zero and the radicals  $G_2$  represent a divalent  $C_1$ - $C_3$  radical;

$G_3$  represents a polymeric radical resulting from the (homo)polymerization of at least one monomer of the carboxylic acid type containing ethylenic unsaturation;

$G_4$  represents a polymeric radical resulting from the (homo)polymerization of at least one monomer of the  $C_1$ - $C_{10}$  alkyl (meth)acrylate type.

11. Composition according to claim 9 or 10, characterized in that the unit of formula (I) simultaneously has the following characteristics:

the radicals  $G_1$  denote a methyl radical;

n is non-zero and the radicals  $G_2$  represent a propylene radical;

$G_3$  represents a polymeric radical resulting from the (homo)polymerization of at least acrylic acid and/or methacrylic acid;

$G_4$  represents a polymeric radical resulting from the (homo)polymerization of at least methyl (meth)acrylate.

12. Composition according to any one of claims 1 to 11, characterized in that the number-average molecular mass of the grafted silicone polymer ranges approximately from 10,000 to 1,000,000, and even more preferably approximately from 10,000 to 100,000.

13. Composition according to any one of the preceding claims, characterized in that the grafted silicone polymer(s) is (are) present in concentrations ranging from 0.01 to 20% by weight relative to the total weight of the composition, preferably from 0.1 to 15% by weight and more particularly from 0.5 to 10% by weight.

14. Composition according to any one of the preceding claims, characterized in that the polymer of the aqueous dispersion comprises at least one monomer chosen from styrene, butadiene, ethylene, propylene, vinyltoluene, vinyl propionate, vinyl alcohol, acrylonitrile, chloroprene, vinyl acetate, urethanes, isoprene, isobutene and esters or amides of acrylic, methacrylic, maleic, crotonic or itaconic acid, vinyl ether, vinylpyrrolidone, vinylimidazole, trimethylammonioethyl (meth)acrylate and mixtures thereof.

15. Composition according to any one of the preceding claims, characterized in that the nonionic polymer of the aqueous dispersion is chosen from polyesters, polyamides, polyurethanes and polyethers.

16. Composition according to any one of the preceding claims, characterized in that the nonionic polymer of the aqueous dispersion is chosen from:

vinyl acetate homopolymers;

copolymers of vinyl acetate and of acrylic ester;

Should read  
"acrylonitrile"

COSMETIC COMPOSITION FOR TREATING KERATIN SUBSTANCES,  
COMPRISING AT LEAST ONE GRAFTED SILICONE POLYMER AND AT  
LEAST ONE AQUEOUS DISPERSION OF INSOLUBLE PARTICLES OF  
NONIONIC OR CATIONIC POLYMER

5           The present invention relates to a cosmetic  
or dermatological composition for treating keratin  
substances, in particular the hair, comprising at least  
one grafted silicone polymer with a polysiloxane  
skeleton grafted with non-silicone organic monomers,  
10 and at least one aqueous dispersion of insoluble  
particles of nonionic or cationic polymer.

It has been proposed to use aqueous  
dispersions of insoluble polymer particles in  
compositions for maintaining the hairstyle. However,  
15 the results obtained hitherto are still not  
satisfactory. The reason for this is that the fixing  
power is still not sufficient, the drying time is long  
and the cosmetic properties are still not satisfactory.  
Furthermore, the polymer is difficult to remove from  
20 the hair during washing with a shampoo.

Polymers with a polysiloxane skeleton grafted  
with non-silicone organic monomers are also known in  
the prior art. They are preferably chosen from those  
described in patent applications EP-A-0,582,152 and WO  
25 93/23009. They are used in particular in hair  
compositions for their styling properties.

Compositions for washing and/or caring for  
and/or treating the hair containing styling polymers of



the present description by way of non-limiting references.

According to a particularly preferred embodiment of the present invention, the silicone polymer used comprises the result of the radical copolymerization between, on the one hand, at least one non-silicone anionic organic monomer having ethylenic unsaturation and/or a non-silicone hydrophobic organic monomer having ethylenic unsaturation, and, on the other hand, a silicone having in its chain at least one functional group capable of reacting with the said ethylenic unsaturations of the said non-silicone monomers, forming a covalent bond, in particular thio functional groups.

According to the present invention, the said anionic monomers containing ethylenic unsaturation are preferably chosen, alone or as a mixture, from linear or branched, unsaturated carboxylic acids, optionally partially or totally neutralized in the form of a salt, it being possible for this (these) carboxylic acid(s) to be, more particularly, acrylic acid, methacrylic acid, maleic acid, maleic anhydride, itaconic acid, fumaric acid and crotonic acid. The suitable salts are, in particular, alkali metal salts, alkaline-earth metal salts and ammonium salts. It will likewise be noted that, in the final grafted silicone polymer, the organic group of anionic nature which comprises the result of the radical (homo)polymerization of at least

Claims 1 to 11, characterized in that the number-average molecular mass of the grafted silicone polymer ranges approximately from 10,000 to 1,000,000, and even more preferably approximately from 10,000 to 100,000.

5           13. Composition according to any one of the preceding claims, characterized in that the grafted silicone polymer(s) is (are) present in concentrations ranging from 0.01 to 20% by weight relative to the total weight of the composition, preferably from 0.1 to  
10 15% by weight and more particularly from 0.5 to 10% by weight.

14. Composition according to any one of the preceding claims, characterized in that the polymer of the aqueous dispersion comprises at least one monomer  
15 chosen from styrene, butadiene, ethylene, propylene, vinyltoluene, vinyl propionate, vinyl alcohol, vinyl  
✓ acrylonitrile, chloroprene, vinyl acetate, urethanes, isoprene, isobutene and esters or amides of acrylic, methacrylic, maleic, crotonic or itaconic acid, vinyl  
20 ether, vinylpyrrolidone, vinylimidazole, trimethylammonioethyl (meth)acrylate and mixtures thereof.

15. Composition according to any one of the preceding claims, characterized in that the nonionic  
25 polymer of the aqueous dispersion is chosen from polyesters, polyamides, polyurethanes and polyethers.

16. Composition according to any one of the preceding claims, characterized in that the nonionic

✓  
CLAIMS

1. Cosmetic or dermatological composition intended for treating keratin substances, characterized in that it comprises, in a cosmetically or  
5 dermatologically acceptable medium, at least one grafted silicone polymer with a polysiloxane skeleton grafted with non-silicone organic monomers and at least one aqueous dispersion of insoluble particles of nonionic or cationic polymer.
- 10 2. Composition according to Claim 1, characterized in that the grafted silicone polymer comprises a main polysiloxane chain on which is grafted, inside the said chain as well as, optionally, on at least one of its ends, at least one organic group  
15 containing no silicone.
3. Composition according to Claim 1 or 2, characterized in that the grafted silicone polymer can be obtained by radical copolymerization between, on the one hand, at least one non-silicone anionic organic  
20 monomer having ethylenic unsaturation and/or a non-silicone hydrophobic organic monomer having ethylenic unsaturation, and, on the other hand, a polysiloxane having in its chain at least one, and preferably several, functional groups capable of reacting with the  
25 said ethylenic unsaturations of the said non-silicone monomers.

4. Composition according to Claim 3,